



IBM PowerHA SystemMirror for AIX Standard and Enterprise Editions V6.1, IBM Compliance Expert Express Edition V1.1, and IBM Workload Partitions Manager V2.1 enhance your IT environment

Table of contents

1 Overview	6 Publications
2 Key prerequisites	7 Technical information
2 Planned availability date	13 Ordering information
3 Description	19 Terms and conditions
4 Product positioning	22 Prices
5 Program number	22 AP distribution

At a glance

IBM® is offering one new program and new versions of three other programs and associated Software Maintenance.

- IBM PowerHA SystemMirror for AIX® Standard and Enterprise Editions V6.1 give IBM clients a better value and more choice than previous versions of PowerHA.
- IBM Compliance Expert Express Edition V1.1
 - Is designed to help clients reduce the cost of meeting regulatory compliance standards by automating the AIX system security configuration
 - Uses configuration templates provided by IBM that control specific system security configuration settings such as password length
 - Provides compliance configuration templates for the Payment Card Industry Data Security Standard V1.2 (PCI DSS) and the Department of Defense Security Technical Implementation Guide V5.1 (DoD STIG)
- IBM Workload Partitions Manager™ (WPAR Manager) V2.1 provides improved usability and new capabilities.

Overview

IBM PowerHA SystemMirror Standard and Enterprise Editions V6.1

PowerHA SystemMirror for AIX V6.1 is the next generation of the popular PowerHA for AIX V5.5 and is available in two packages: PowerHA SystemMirror for AIX Standard Edition and PowerHA SystemMirror for AIX Enterprise Edition. The PowerHA SystemMirror Standard Edition offering is optimized for data center operations and includes the Smart Assist feature. The PowerHA SystemMirror Enterprise Edition includes the Standard Edition plus the function previously packaged as the PowerHA Extended Distance (XD) feature. It is optimized for both data center and multiple site HA/DR operations.

There are three priced tier options within each of the editions: small, medium, and large. The PowerHA SystemMirror offering is being restructured to better align ordering with other IBM Power® Software offerings.

- PowerHA SystemMirror for AIX is designed, tested, and integrated by IBM to provide the most robust, easy-to-use HA/DR clustering solution for AIX environments.

- Widely implemented around the globe, PowerHA SystemMirror provides monitoring, detection, and automation for both the data center and multiple site deployments.
- PowerHA SystemMirror for AIX is the IBM Power Systems strategic solution for business resiliency and, as in this release, continues to be enhanced for function, robustness, and usability.

IBM Compliance Expert Express Edition V1.1

IBM Compliance Expert Express Edition is a new offering that describes the requirements for meeting a set of IT governance best practices. Different compliance standards may focus on requirements needed to operate IT in specific industries. This offering is designed to help clients reduce the cost of meeting regulatory compliance standards by automating the AIX system security configuration.

IBM Workload Partitions Manager V2.1

Workload Partitions Manager (WPAR Manager) V2.1 replaces the previous version of WPAR Manager and provides improved usability and new capabilities:

- IBM Systems Director-based: The WPAR Manager is now delivered as a plug-in to IBM Systems Director instead of as a stand-alone application. This new integration improves the usability of the WPAR Manager by integrating WPAR administration with the other management capabilities provided by IBM Systems Director.
- Live Application Mobility for WPARs with SAN devices: This new capability provides businesses with additional flexibility to configure WPARs with traditional SAN storage devices while preserving the capability to relocate WPARs to provide additional application availability, workload management, and energy savings.
- Faster Live Application Mobility for WPARs: Live Application Mobility has been significantly enhanced to provide for faster relocation operations. This enhancement can reduce the amount of time the applications are in transit and are not responding to end-user requests, in some cases to only a few seconds.

Key prerequisites

PowerHA SystemMirror for AIX Standard and Enterprise Editions require:

- IBM POWER5™ or POWER6™ servers with adequate slots for your disk and network adapters in a no-single-point-of-failure configuration
- AIX 5.3, or later, or AIX 6.1, or later

For additional product details on AIX V6.1 support, refer to the PowerHA V5.3 and V5.4 support on AIX V6.1 document, dated November 6, 2007.

IBM Compliance Expert Express Edition requires an:

- IBM server that runs with the POWER5 or POWER6 processors
- IBM AIX 5 or AIX 6 operating system

IBM Workload Partitions Manager V2 requires an AIX 6 operating system.

Planned availability date

- October 23, 2009, for IBM PowerHA SystemMirror for AIX Standard Edition V6.1, IBM PowerHA SystemMirror for AIX Enterprise Edition V6.1, and IBM Compliance Expert Express Edition V1.1
- November 20, 2009, for IBM Workload Partitions Manager V2.1

Description

IBM PowerHA SystemMirror for AIX Enterprise Edition and Standard Edition V6.1

PowerHA SystemMirror for AIX Enterprise Edition V6.1 offers two new enhancements: PowerHA GLVM configuration wizard and replication support for EMC Symmetrix Remote Data Facility (SRDF).

- The PowerHA GLVM configuration wizard is designed to enable PowerHA SystemMirror Enterprise Edition clients to easily and quickly deploy GLVM sync mode between two nodes in a cross-site PowerHA SystemMirror cluster configuration. GLVM sync mode was announced with PowerHA V5.5 and is the host-based mirroring PowerHA SystemMirror option. It is becoming an increasingly common requirement for IT organizations to provide remote recovery capabilities with continuous data replication, enabling near zero recovery point objectives as well as aggressive recovery time objectives. PowerHA SystemMirror Enterprise Edition meets those requirements and now with the GLVM configuration wizard, setup and deployment is within reach of all clients. Gone are the days of complex setup procedures that necessitated specialized and expensive services.
- The second new feature of the PowerHA SystemMirror Enterprise Edition is enabled for EMC Symmetrix Remote Data Facility (SRDF) deployments. Many IBM Power Systems clients deploy their storage via EMC storage and have asked that IBM extend PowerHA SystemMirror support to include their storage replication configurations. Now with the PowerHA SystemMirror Enterprise Edition, clients using EMC storage with SRDF can take advantage of the PowerHA SystemMirror capabilities for HA/DR operations. EMC clients may also deploy PowerHA SystemMirror Standard Edition for data center operations.

PowerHA SystemMirror for AIX Standard Edition V6.1 DLPAR support for POWER5 and POWER6 enables clients to exploit the advanced features of the dynamic logical partition capabilities of the POWER5 and POWER6 processors for more flexible and economical cluster configurations. For example, a client may configure minimal resources (processor cores and memory) active on a secondary node in a PowerHA SystemMirror cluster and upon failover, the PowerHA SystemMirror Standard Edition will gain the required memory and processing power prior to restarting the application. This capability gives clients greater flexibility in deploying various application and test environments on a secondary node that can be demoted upon failover, allowing the higher-priority production environment to take over resources and resume operations.

PowerHA SystemMirror enhancements include:

- IPv6 enablement: PowerHA SystemMirror now supports configurations using pure IPv6 networks as well as network environments where IPv4 and IPv6 coexist.
- Usability and RAS enhancements: The user interface has been simplified with a more intuitive look and feel. Simple things like built-in F1 key help text and validation checks ensure subsequent operational steps are valid, making the new interface simpler and easier. In addition to the usability enhancements, PowerHA SystemMirror for AIX, V6.1 has integrated AIX trace commands, enabling complete end-to-end diagnostic analysis.

IBM Compliance Expert Express Edition V1.1

Compliance describes the requirements for meeting a set of IT governance best practices in a consistent manner. Different compliance standards may focus on requirements needed to operate IT in specific industries. For example, PCI DSS focuses on securing IT that handles credit card transaction processing. The most costly element of compliance is to consistently meet the IT requirements.

The IBM Compliance Expert Express Edition is designed to provide two key capabilities to address the issue of compliance management:

- Provides predefined profiles that encapsulate the requirements of the relevant security standard. For example, the profile for the PCI DSS standard controls over 126 system security parameters covering 28 PCI requirements. This allows administrators to focus on complying with the standard instead of interpreting the lengthy standards documents.
- Provides the mechanism to implement the specific configuration recommendations specified in the predefined profile. IBM Compliance Expert uses mechanisms similar to that of the AIX Security Expert component of the AIX operating system to simultaneously set all of the security configuration parameters via a simple command-line interface.

The IBM Compliance Expert Express Edition supports the following standards:

- Payment Card Industry Data Security Standard V1.2 (PCI DSS)
- Department of Defense Security Technical Implementation Guide V5.1 (DoD STIG)

Most compliance specifications include requirements outside of the scope of the systems configuration capabilities provided by IBM Compliance Expert Express Edition. For example, the PCI DSS requirement 5.1.2 specifies that the "Separate Development/Test and Production Environments" must be maintained. This means that although the IBM Compliance Expert provides capabilities to simplify compliance, the administrator is responsible for complying with all standards requirements.

The IBM Compliance Expert is built on the same technology used by the AIX Security Expert (part of the AIX operating system since AIX V5.3 Technology Level 5), but uses a new command line utility to implement the compliance standard configuration template on a single AIX system.

Clients can use management tools like IBM Systems Director, Cluster Systems Manager, or the AIX DCEM function of the Systems Director Console for AIX V6 to run commands to apply the configuration template on multiple systems.

Accessibility by people with disabilities

A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

http://www.ibm.com/able/product_accessibility/index.html

Product positioning

The IBM Compliance Expert Express Edition is targeted at AIX clients in two specific areas:

- Power Systems clients using AIX in the United States Department of Defense (US DoD) industry, including industries such as aerospace that provide goods or services to the US DoD
- Power Systems clients using AIX to support applications that process or transfer credit card transactions, including clients in the finance, retail, and card processing services industries

The IBM Compliance Expert Express Edition is complementary to the Tivoli® Security Information and Event Manager (TSIEM). TSIEM provides the capability to monitor for events related to compliance issues. The IBM Compliance Expert Express Edition addresses the requirement to set the system parameters required for compliance that TSIEM monitors.

Program number

Program number	VRM	Program name
5765-H23	6.1.0	IBM PowerHA SystemMirror Standard Edition
5660-H23	1.1.0	SW Maintenance Regist/Renewal 1 Year
5661-H23	1.1.0	SW Maintenance After License 1 Year
5662-H23	1.1.0	SW Maintenance Registration 3 Year
5663-H23	1.1.0	SW Maintenance Renewal 3 Year
5664-H23	1.1.0	SW Maintenance After License 3 Year
5765-H24	6.1.0	IBM PowerHA SystemMirror Enterprise Edition
5660-H24	1.1.0	SW Maintenance Regist/Renewal 1 Year
5661-H24	1.1.0	SW Maintenance After License 1 Year
5662-H24	1.1.0	SW Maintenance Registration 3 Year
5663-H24	1.1.0	SW Maintenance Renewal 3 Year
5664-H24	1.1.0	SW Maintenance After License 3 Year
5765-G82	1.1.0	IBM Compliance Expert Express Edition
5660-G82	1.1.0	SW Maintenance Regist/Renewal 1 Year
5661-G82	1.1.0	SW Maintenance After License 1 Year
5662-G82	1.1.0	SW Maintenance Registration 3 Year
5663-G82	1.1.0	SW Maintenance Renewal 3 Year
5664-G82	1.1.0	SW Maintenance After License 3 Year
5765-G83	2.1.0	IBM Workload Partitions Manager
5660-WPM	1.1.0	SW Maintenance Regist/Renewal 1 Year
5661-WPM	1.1.0	SW Maintenance After License 1 Year
5662-WPM	1.1.0	SW Maintenance Registration 3 Year
5663-WPM	1.1.0	SW Maintenance Renewal 3 Year
5664-WPM	1.1.0	SW Maintenance After License 3 Year

The SWMA program numbers (566x-WPM) have been previously announced.

Product identification number

Program PID number	Maintenance 1-year PID number	Maintenance 3-year PID number
5765-H23	5660-H23 5661-H23	5662-H23 5663-H23 5664-H23
5765-H24	5660-H24 5661-H24	5662-H24 5663-H24 5664-H24
5765-G82	5660-G82 5661-G82	5662-G82 5663-G82 5664-G82
5765-G83	5660-WPM 5661-WPM	5662-WPM 5663-WPM 5664-WPM

Statement of support

PowerHA SystemMirror Enterprise Edition now supports High Availability and Disaster Recovery with DS8000™ Storage (Metro Mirror) in the VIOS-based virtualized environments.

The Extended Distance (XD) feature of the IBM PowerHA SystemMirror Enterprise Edition now supports High Availability and Disaster Recovery (HA/DR) capability with EMC Symmetrix Remote Data Facility (SRDF) replication with the following model,

version, and microcode level of EMC storage systems: DMX-3 5772.103.93 and subsequent fix packages; DMX-4 5773.134.94 and subsequent fix packages along with the following versions of EMC software: SYMCLI 7.0.0.0 and subsequent fix packages; PowerPath 5.3.0.0 and subsequent fix packages. IBM PowerHA customers who have a support agreement with IBM for PowerHA can use the IBM channels to report problems encountered with the PowerHA product while exploiting the qualified EMC storage in accordance with the terms and conditions of the customer support agreement with IBM for PowerHA.

IBM will investigate reported problems to identify and resolve defects in the PowerHA product. If the problem is suspected in the EMC storage system or EMC-provided software components in relation to SRDF, the customer should report the problem directly to EMC. IBM and EMC may jointly investigate reported problems.

Offering Information

Product information is available via the Offering Information Web site

<http://www.ibm.com/common/ssi>

Publications

No hardcopy publications are shipped with these programs.

License Information will display automatically when HACMP™ V5 is installed. The following publications are supplied on CD-ROM with the basic machine-readable material.

Title	Number
HACMP for AIX: Concepts and Facilities Guide	SC23-4864
HACMP for AIX: Planning Guide	SC23-4861
HACMP for AIX: Installation Guide	SC23-5209
HACMP for AIX: Administration Guide	SC23-4862
HACMP for AIX: Troubleshooting Guide	SC23-5177
HACMP for AIX: Programming Client Applications	SC23-4865
HACMP for AIX: Master Glossary	SC23-4867

For HACMP/XD GLVM customers:

HACMP/XD GLVM Planning and Administration Guide	SA23-1338
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For HACMP/XD Metro Mirror customers:

HACMP/XD: Metro Mirror Planning and Administation Guide	SC23-4863
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For HACMP Smart Assist customers:

HACMP for AIX: Smart Assist for Websphere User's Guide	SC23-4877
HACMP for AIX: Smart Assist for Oracle	SC23-5178
HACMP for AIX: Smart Assist for DB2®	SC23-5179
HACMP for AIX: Smart Assist Developer's Guide	SC23-5210

Specified operating environment

Hardware requirements

PowerHA V5 works with Power Systems servers in a "no-single-point-of-failure" server configuration running an AIX operating system image. PowerHA V5 supports the Power System models that are designed for server applications and which meet the minimum requirements for internal memory, internal disk, and I/O slots. The program's hardware specifications information may be found in documentation accompanying the program or other information published by IBM, such as the program's sales manual.

PowerHA SystemMirror requirements:

POWER4™ processor-based servers

- Deskside systems: Models 610 (7028-6E1), 615 (7029-6E3), and 630 (7028-6E4)
- Rack systems: Models 610 (7028-6C1), 615 (7029-6C3), 630 (7028-6C4), 6H0, 6H1, 6M1 (pSeries® 660), 655 (7039-651), and 650 (7038-6M2)
- High-end servers: Models 690 (7040-681), 670 (7040-671), including models with POWER4+™ processors

POWER5 processor-based servers

- POWER5 servers: pSeries Models 9110-510, 9111-520, 9113-550, 9117-570, 9119-590, 9116-561+, and 9119-595; iSeries® Models 9406-520, 9406-550, 9406-570, 9406-590, and 9406-595
- System p5®: Models 185 (7037-A50), 285 (9111-285), 505 and 505Q (9115-505), 510 and 510Q (9110-510 and 9110-51A), 51Q, 520, and 520Q (9111-520 and 9131-52A), 550 and 550Q (9113-550 and 9133-55A), 560Q (9116-561), 570 (9115-570), 575 (9118-575), and 590 and 595 (9119-590 and 9119-595)

POWER6 processor-based servers

- Power 575 (9125-F21) and Power 595 (9119-FHA)
- Power Systems: Models p520 (8203-E4A), p550 (8204-E8A), p560 (8234-EMA), and p570 (9117-MMA)

Power blades

- BladeCenters: BladeCenter® E (8720-1RX) and BladeCenter H (8852-HC1)
- POWER5 blades: Models JS20 (8842-42U, 4TU) and JS21 (8844-31U, 51U)
- POWER6 blades: Models JS12 (7998-60X), JS22 (7998-61X), JS23 (7778-23X), and JS43 (7778-43X)

Note: This support does not include the IBM BladeCenter T (8720-1RX and 8730-1RX).

External storage subsystems

- IBM 2105 TotalStorage® Enterprise Storage Server® Model 800 (ESS800)
- IBM TotalStorage DS3400 (1726-42T)
- IBM TotalStorage DS4100 Storage Server 1724-100 (FASST100) with DS4000™ EXP100 1710-10U Storage Expansion Unit
- IBM TotalStorage DS4200 controller with EXP420 expansion unit and supported drives
- IBM TotalStorage DS4300 Storage Server 1722-60U (FASST 600)
- IBM TotalStorage DS4300 with Turbo feature (1722-60U with #2000 or #2010) (FASST 600)

- IBM TotalStorage DS4400 Storage Server 1742-1RU (FAStT700)
- IBM TotalStorage DS4500 Storage Server 1742-90U (FAStT900)
- IBM TotalStorage DS4700 (1814-70A)
- IBM TotalStorage DS4800 1815 with EXP810 Storage Expansion Unit (1812-81A)
- IBM TotalStorage DS5100/5300 (1818-51A/1818-53A) with EXP5000 Storage Expansion Unit (1818-D1A)
- IBM TotalStorage FAStT200 Storage Server 3542-2RU
- IBM TotalStorage FAStT500 Storage Server 3552-1RU
- IBM 2102-F10 Fibre Channel RAID Storage Server
- IBM 2104 Expandable Storage Plus Models DL1, TL1, DU3, and TU3
- IBM 2104 TotalStorage Expandable Storage Plus 320 Models DS4 and TS4
- IBM 7031 TotalStorage Expandable Storage Ultra 320 Model D24 and T24
- IBM 2108 Storage Area Network (SAN) Data Gateway Model G07
- IBM 2031-016 McData ES-3016 Fibre Channel Product
- IBM 2031-032 McData ES-3032 Fibre Channel Product
- IBM 2031-216 McData ES-3216 Fibre Channel Product
- IBM 2031-232 McData ES-3232 Fibre Channel Product
- IBM 2032-001 McData ED-5000 Fibre Channel Director
- IBM 2032-064 McData ED-6064 Fibre Channel Director
- IBM 2031-224 McData Sphereon 4500 Fibre Channel Switch/SAN24M-1/IBM 2026-224
- IBM 2034-212 McData Sphereon 4300 Fibre Channel Switch
- IBM 2109 Models S08, S16, F16, F32, and M12 SAN Fibre Channel Switch
- IBM 3534 Model F08 SAN Fibre Channel Switch
- IBM 2005-BK5 SAN Fibre Channel Switch
- IBM 2145-4F2 TotalStorage SAN Volume Controller with IBM TotalStorage SVC Storage Software V4.2, 4.3, 4.3.1
- IBM 2145-8F2 TotalStorage SAN Volume Controller with IBM TotalStorage SVC Storage Software V4.2, 4.3, 4.3.1
- IBM 2863 System Storage™ N 3700 Models A20 and G20 with Data ONTAP V7.1, or later
- IBM 2858 System Storage N 6040 Models A10 and A20 with Data ONTAP V7.2.3, or later
- IBM 2858 System Storage N 6070 Models A11 and A21 with Data ONTAP V7.2.3, or later
- IBM 2866 System Storage N 7700 Models A21 and G21 with Data ONTAP V7.2.3, or later
- IBM 2867 System Storage N 7900 Models A21 and G21 with Data ONTAP V7.2.3, or later
- IBM 2868 System Storage N 5600 Models A20 and G20 with Data ONTAP V7.2.3, or later
- IBM 2869 System Storage N 5300 Models A20 and G20 with Data ONTAP V7.2.3, or later
- IBM 2864 System Storage N5200 models A20 and G20
- IBM 2865 System Storage N5500 models A20 and G20
- IBM 1750 System Storage DS6000™ Model EX2 Expansion Enclosure
- IBM 1750 System Storage DS6800 Model 522
- IBM 2107 System Storage DS8000 Turbo Models 931, 932, and 9B2
- IBM 2107-922 System Storage DS8700
- IBM 2810-A14 XIV Storage System

Communications adapters

PCI/ISA adapters

- #1905 4 Gb Single Port Fibre Channel PCI-X 2.0 DDR Adapter
- #1910 4 Gb Dual Port Fibre Channel PCI-X 2.0 DDR Adapter
- #1912 IBM PCI-X DDR Dual Channel Ultra320 LVD SCSI Adapter
- #1954 4-Port 10/100/100 Base-TX PCI-X Adapter
- #1977/1957 IBM 2 Gigabit Fibre Channel PCI-X Adapter
- #1978 IBM Gigabit Ethernet-SX PCI-X Adapter
- #1979/1959 IBM 10/100/1000 Base-TX Ethernet PCI-X Adapter
- #1981 IBM 10 Gigabit Ethernet-SR PCI-X Adapter
- #1982 IBM 10 Gigabit Ethernet-LR PCI-X Adapter
- #1983/1990 IBM 2-port 10/100/1000 Base-TX Ethernet PCI-X
- #1984 IBM Dual Port Gigabit Ethernet-SX PCI-X Adapter
- #2944 128-Port Asynchronous Controller, PCI bus
- #2943 8-Port Asynchronous EIA-232/RS-422, PCI bus Adapter
- #4961 IBM Universal 4-Port 10/100 Ethernet Adapter
- #4962 IBM 10/100 Mbps Ethernet PCI Adapter II
- #5700 IBM Gigabit Ethernet-SX PCI-X Adapter
- #5701 IBM 10/100/1000 Base-TX Ethernet PCI-X Adapter
- #5706 IBM 2-Port 10/100/1000 Base-TX Ethernet PCI-X Adapter
- #5707 IBM 2-Port Gigabit Ethernet-SX PCI-X Adapter
- #5718/5719 IBM 10 Gigabit -SR/-LR Ethernet PCI-x adapters
- #5721 IBM 10 Gigabit Ethernet-SR PCI-X 2.0 Adapter
- #5722 IBM 10 Gigabit Ethernet-LR PCI-X 2.0 Adapter
- #5740 4-Port 10/100/100 Base-TX PCI-X Adapter

GX HCA

- #1809/10/11 IBM GX Dual-port 4x IB HCA
- #7820 IBM GX Dual-port 12x IB HCA

PCI adapters

- #1913/5737 PCI-X DDR Dual Channel Ultra320 SCSI RAID Adapter
- #1975/5703 PCI-X Dual Channel Ultra320 SCSI RAID Adapter
- #5711 PCI-X Dual Channel Ultra320 SCSI RAID Blind Swap Adapter
- #5710/5712 PCI-X Dual Channel Ultra320 SCSI Adapter
- #5713/1986 1 Gigabit-TX iSCSI TOE PCI-X adapter (copper connector)
- #5714/1987 1 Gigabit-SX iSCSI TOE PCI-X adapter (optical connector)
- #5716 2 Gigabit Fibre Channel PCI-X Adapter
- #6230 Advanced SerialRAID Plus Adapter (including Fast Write Cache (#6235) with two-initiator only)
- #6228 1-and 2-Gigabit Fibre Channel Adapter for 64-bit PCI Bus
- #6239 2 Gigabit FC PCI-X Adapter

Storage adapters

- #5735 PCI-Express Dual Port Fibre Channel Adapter
- #5901/5903 PCI-Express SAS Adapters
- #5773/5774 Gigabit PCI Express Fibre Channel Adapter
- #5723 2-Port Asynchronous EIA-232/RS-422, PCI bus Adapter
- #5736 PCI-X DDR Dual Channel Ultra320 SCSI Adapter

- #5758 4 Gb Single Port Fibre Channel PCI-X 2.0 DDR Adapter
- #5759 4 Gb Dual Port Fibre Channel PCI-X 2.0 DDR Adapter

IBM Compliance Expert Express Edition V1.1 and IBM Workload Partitions Manager V2.1 support IBM servers that run with the POWER5 or POWER6 processors, including:

- Power Systems
- System p®
- System i®
- BladeCenter

Software requirements

PowerHA SystemMirror supports the AIX V5.3 and AIX V6.1 operating system. PowerHA SystemMirror requires specific versions of AIX and RSCT (Reliable Scalable Cluster Technology). Those required versions of RSCT are supplied with the PowerHA SystemMirror installation media and will be installed automatically, by default.

The specific requirements for PowerHA SystemMirror V6.1 running with AIX are:

- PowerHA SystemMirror V6.1:
 - AIX 5.3 Technology Level 9 with RSCT V2.4.12, or later
 - AIX 6.1 Technology Level 2 with RSCT V2.5.4, or later
- PowerHA V5.5:
 - AIX 5.3 Technology Level 7 with RSCT V2.4.10, or later
 - AIX 6.1 Technology Level 2 with RSCT V2.5.2, or later
- PowerHA V5.4.1:
 - AIX 5.2 Technology Level 8 with RSCT V2.3.9.2 (APAR IY84921), or later
 - AIX 5.3 Technology Level 4 with RSCT V2.4.5.1 (APAR IY84920), or later

PowerHA SystemMirror V6.1 supports dynamic upgrade from HACMP 5.4.1 and 5.5, and static upgrades from all prior versions.

- A dynamic upgrade from PowerHA V5.1, V5.2, or V5.3, V5.4.1, or V5.5 involves installing PowerHA SystemMirror V6.1 on all nodes in the cluster; however, the version compatibility function allows you to upgrade the cluster one node at a time, without taking the entire cluster offline. Configuration data is retained.
- PowerHA supports Virtual SCSI and Virtual LAN. Refer to PowerHA supporting documentation requirements and specifications for Virtual SCSI and Virtual LAN (VLAN).
- IBM PowerHA/XD is supported on IBM Virtual I/O clients for SVC, SPPRC, and GLVM.

PowerHA SystemMirror Standard Edition requirements:

- Each node within a high availability server complex requires the licensed program PowerHA V6 to be installed. Except during the upgrade process from earlier releases of PowerHA V5, it is recommended that all nodes in the PowerHA server complex be at the same AIX operating system level, including PTFs and maintenance upgrades.
- Some of the devices supported in PowerHA V6 may require a later release level of the AIX operating system; refer to the specific hardware announcement for the AIX release levels required by the hardware.
- The HAView facility requires the installation of Tivoli NetView® for AIX (5697-NVW).
- To use C-SPOC with VPATH disks, SDD 1.3.1.3, or later, is required.
- To use PowerHA Online Planning Worksheets, AIX Java™ Runtime Environment is required.

- PowerHA supports use of SDDPCM V2.1.0.8, or later, configured to access the shared disks with the "no-reserve" reserve policy. The shared disks must be defined as being in an Enhanced Concurrent Mode (ECM) volume group. Persistent reserve policy is not supported in a PowerHA environment.

PowerHA Standard Edition requirements for PowerHA Smart Assist:

- PowerHA V5 (5765-F62) base feature at the same release level as HACMP Smart Assist
- For Smart Assist for DB2: PowerHA V5.4 and either AIX V5.2 with Recommended Maintenance Package 5200-01, or later, or AIX V5.3
- For Smart Assist for Oracle: RSCT 2.3.6 filesets
- For Smart Assist for WebSphere®: RIBM HTTP Server V6.0

PowerHA Smart Assist supports the following applications or later modification levels of these applications:

- For new PowerHA V5.5 configurations: WebSphere Application Server V6.0 (in a Network Deployment environment only)

Application Server V5.0 will continue to be supported.

PowerHA SystemMirror Enterprise Edition requirements for PowerHA/XD:

- PowerHA V6 base (cluster.es.server.rte 6.n.0.0) at the same release level (n) as PowerHA/XD.
- For Metro Mirroring, at a minimum:
 - AIX 5 Java Runtime Environment
 - IBM Storage Subsystem Device Driver, Microcode, and Command-line Interface
 Refer to the PowerHA/XD Release Notes shipped with the product for details regarding requirements for specific configurations and software levels required for PowerHA/XD Metro Mirroring.
- For XD GLVM: AIX V5.3 with Technology Level 5

The IBM Compliance Expert Express Edition is available for systems running:

- AIX V5.3 at Technology Level 5300-11, or later
- AIX V6 at Technology Level 6100-04, or later

The IBM Workload Partitions Manager requires AIX V6, or later.

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a readme file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

Limitations

For POWERHA:

- PowerHA supports clusters up to 64 resource groups and 256 interfaces across up to 32 AIX 5/PowerHA images (System p or System i servers, SP nodes, RS/6000® systems, or LPARs Power Systems or LPARs).
- The following networks are not supported:
 - Serial Optical Channel Converter
 - SLIP
 - Fibre Channel Switch
 - 802_ether
 - Virtual IP Address facility of AIX 5

- IP V6
- PowerHA support for CUoD, CBU, and DLPAR:
PowerHA can be run in LPARs to which processors or memory are added through CUoD or DLPAR (refer to Hardware Announcement [AG02-0346](#), dated October 08, 2002 or CBU (refer to Hardware Announcement [AG03-0371](#), dated October 14, 2003. Care must be taken to ensure that sufficient capacity and appropriate procedures are in place to support these features.

Adjusting the hardware configuration (adding or removing processors or memory) of an PowerHA node will, under many circumstances, put a significant additional temporary load on that system. This can cause PowerHA to interpret that system as having failed. HACMP does not currently have a supported mechanism that will automatically deal with this in all cases. Customers who want to take advantage of these features should run tests and perform adequate benchmarking of their environments to determine the timing implications under varying workload conditions. IBM is not responsible for failures due to incorrect settings of these values, as these tuning parameters are unique for every customer environment.

- When installing PowerHA on a system with Trusted Computing Base (TCB) security in place, special considerations are required. PowerHA will modify some system files that are monitored by TCB. This will cause errors to be reported by TCB. The error messages may not identify PowerHA as the origin of the changes to the monitored files. While this does will not affect the operation of PowerHA, TCB, or the AIX 5L™ system, customers should verify that the messages are indeed caused only by the installation of PowerHA. If that verification is successful, then no further action is required (the tcbck command should not be used to undo the PowerHA changes). Otherwise, normal security procedures should be followed.
- The Fast Failure Detection function is supported on all supported disk types except SSA.
- PowerHA updates SNMP during installation.

For POWERHA/XD:

- Only one Metro Mirror-supported storage server is supported at each site.
- PowerHA/XD support does not include Global Mirror functions of SVC Copy Services.
- Concurrent disk access within PowerHA/XD GLVM is supported only within sites, not between sites.
- A single PowerHA/XD cluster supports only two sites. A single node can be part of only one PowerHA/XD cluster site.
- The GLVM two-site configuration wizard is not IPv6-enabled.
- A single PowerHA/XD cluster supports up to eight nodes.

For POWERHA Smart Assist:

- Smart Assist for DB2 cannot be used to configure a cluster in a partitioned (DB2 UDB DPF) environment.
- The default configuration created for the WebSphere components assumes an unloaded standby system is available, with enough resources to assume the workload of the active system.
- A single standby system may be configured to protect multiple workloads, but is assumed to only effectively execute one workload at a time. The default configuration can be subsequently modified to meet installation-specific requirements.
- For WebSphere configurations using an IBM HTTP Server with application servers, Smart Assist for WebSphere Application Server can be used to configure the IBM HTTP Server to failover with the application server. This will require the administrator to place the IBM HTTP Server data on a shareable volume group accessible by both nodes.
- Because of the common Smart Assist infrastructure added in HACMP V5.4, there is no migration path from the HACMP V5.3 Oracle Smart Assist to the PowerHA V5.5 Oracle Smart Assist. The PowerHA resource groups and resources constructed

with the Version 5.3 Oracle Smart Assist are migrated, but you cannot use the PowerHA V5.5 Oracle Smart Assist facilities to manage Oracle Smart Assist instances originally created on HACMP V5.3.

- The Smart Assists are not IPv6-enabled.

Planning information

Customer responsibilities

Clients with active SWMA and the 5765-F62 HACMP Base offering are equivalent to PowerHA Standard Edition and can move to this offering via the IBM configurator at no cost. Contact your IBM representative to get this update.

Clients with active SWMA and the 5765-F62 HACMP Base plus XD feature are equivalent to PowerHA Enterprise Edition and can move to this offering at no cost by contacting the IBM representative to get the inventory record updated.

Packaging

The following program packages contain one DVD per program that includes program installation documentation and files.

IBM PowerHA SystemMirror for AIX Standard Edition V6.1

IBM PowerHA SystemMirror for AIX Enterprise Edition V6.1

IBM Compliance Expert Express Edition V1.1

IBM Workloads Partitions Manager V2.1

Your Proof of Entitlement (PoE) for this program is a copy of a paid sales receipt, purchase order, invoice, or other sales record from IBM or its authorized reseller from whom you acquired the program, provided that it states the license charge unit (the characteristics of intended use of the program, number of processors, number of users) and quantity acquired.

Information about how you may obtain program services will be provided by the party (either IBM or its authorized reseller) from whom you acquired the program.

Security, auditability, and control

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Ordering information

Charge metric

Program name	PID number	Charge metric
IBM PowerHA SystemMirror Standard Edition V6.1	5765-H23	Per processor Small,Medium,Large
SW Maintenance Regist/Renewal 1 Year	5660-H23	Per processor
SW Maintenance After License 1 Year	5661-H23	Per processor
SW Maintenance Registration 3 Year	5662-H23	Per processor
SW Maintenance Renewal 3 Year	5663-H23	Per processor
SW Maintenance After License 3 Year	5664-H23	Per processor
IBM PowerHA SystemMirror Enterprise Edition V6.1	5765-H24	Per processor Small,Medium,Large
SW Maintenance Regist/Renewal 1 Year	5660-H24	Per processor
SW Maintenance After License 1 Year	5661-H24	Per processor
SW Maintenance Registration 3 Year	5662-H24	Per processor
SW Maintenance Renewal 3 Year	5663-H24	Per processor
SW Maintenance After License 3 Year	5664-H24	Per processor
IBM Compliance Expert Express Edition	5765-G82	Per processor

V1.1		Small,Medium,Large
SW Maintenance Regist/Renewal 1 Year	5660-G82	Per processor
SW Maintenance After License 1 Year	5661-G82	Per processor
SW Maintenance Registration 3 Year	5662-G82	Per processor
SW Maintenance Renewal 3 Year	5663-G82	Per processor
SW Maintenance After License 3 Year	5664-G82	Per processor
IBM Workload Partitions Manager V2.1	5765-G83	Per processor Small,Medium,Large
SW Maintenance Regist/Renewal 1 Year	5660-WPM	Per processor
SW Maintenance After License 1 Year	5661-WPM	Per processor
SW Maintenance Registration 3 Year	5662-WPM	Per processor
SW Maintenance Renewal 3 Year	5663-WPM	Per processor
SW Maintenance After License 3 Year	5664-WPM	Per processor

SWMA program numbers (566x-WPM) have been previously announced.

Note: The charge metric for all SWMA program numbers is per processor (small, medium, large).

As of this announcement, the server products in the table below are associated with the small, medium, or large licenses as indicated.

Definition of server category:

- Small server
 - IBM Power Systems, System p models in Processor Groups C5, D5, and E5
 - IBM Power Systems, System i models in Processor Groups P05, P10, and P20
- Medium server
 - IBM Power Systems, System p models in Processor Group F5
 - IBM Power Systems, System i models in Processor Groups P30 and P40
- Large server
 - IBM Power Systems, System p models in Processor Groups G5 and H5
 - IBM Power Systems, System i models in Processor Groups P50 and P60

Orders may be placed beginning with configurator availability.

For new orders, select from the following table:

5765-H23 IBM PowerHA SystemMirror Standard Edition v6.1

Description	OTC feature number
Per Processor - Small, including 1 Year SWMA	B9RK
Per Processor - Medium, including 1 Year SWMA	B9RL
Upgrade small to medium	B9RM
Per Processor - Large, including 1 Year SWMA	B9RN
Upgrade small to Large	B9RP
Upgrade medium to Large	B9RQ

5765-H24 IBM PowerHA SystemMirror Enterprise Edition v6.1

Description	OTC feature number
Per Processor - Small, including 1 Year SWMA	B9RR
Per Processor - Medium, including 1 Year SWMA	B9RT
Upgrade small to medium	B9RU
Per Processor - Large, including 1 Year SWMA	B9RV
Upgrade small to Large	B9RW
Upgrade medium to Large	B9TA

Description	OTC feature number
Per Processor - Small, including 1 Year SWMA	B9RA
Per Processor - Medium, including 1 Year SWMA	B9RB
Upgrade small to medium	B9RC
Per Processor - Large, including 1 Year SWMA	B9RD
Upgrade small to large	B9RE
Upgrade medium to large	B9RF

5765-G83 IBM Workload Partitions Manager V2.1

Description	OTC feature number
Per Processor - Small, including 1 Year SWMA	B9TB
Per Processor - Medium, including 1 Year SWMA	B9TC
Upgrade small to medium	B9TD
Per Processor - Large, including 1 Year SWMA	B9TE
Upgrade small to large	B9TF
Upgrade medium to large	B9TG

Product upgrades

Upgrade from 5765-H23 Standard Edition to 5765-H24 Enterprise Edition

Description	5765-H23	5765-H24
	Upgrade	Upgrade
	From	To
	Feature	Feature
	number	number
Per Processor Small system	B9RK, B9UC	B9UF
Per Processor Medium system	B9RL, B9RM, B9UD	B9UG
Per Processor Large system	B9RN, B9RP, B9RQ	B9UH
	B9UE	

Upgrade from 5765-F62 PowerHA V5 to 5765-H23 Standard Edition

Description	5765-F62	5765-H23
	Upgrade	Upgrade
	From	To
	Feature	Feature
	number	number
Per Processor Small system	B8NE	B9UC
Per Processor Medium system	B8NG	B9UD
Per Processor Large system	B8NJ	B9UE

Software Maintenance

This software license includes Software Maintenance, previously referred to as *Software Subscription and Technical Support*.

Extending coverage for a total of three years from the date of acquisition may be elected. Order the program number, feature number, and quantity to extend coverage for your software licenses. If maintenance has expired, specify the after license feature number.

Software Maintenance is included with the product license for IBM PowerHA SystemMirror Standard Edition V6.1. SWMA for IBM PowerHA SystemMirror Standard Edition V6.1 may be obtained by ordering the following:

Feature description	Program number	OTC feature number
SW Maintenance Registration/Renewal 1 Year	5660-H23	
Per Processor Small 1 Year No-Charge Regist		A1QF
Per Processor Small 1 Year Renewal		A1QM
Per Processor Medium 1 Year No-Charge Regist		A1QH
Per Processor Medium 1 Year Renewal		A1QN
Per Processor Large 1 Year No-Charge Regist		A1QK
Per Processor Large 1 Year Renewal		A1QP
SW Maintenance After License 1 Year	5661-H23	
Per Processor Small 1 Year After License		0462
Per Processor Medium 1 Year After License		0464
Per Processor Large 1 Year After License		0466
SW Maintenance Registration 3 Year	5662-H23	
Per Processor Small 3 Year Registration		0702
Per Processor Medium 3 Year Registration		0704
Per Processor Large 3 Year Registration		0706
SW Maintenance Renewal 3 Year	5663-H23	
Per Processor Small 3 Year Renewal		A0TA
Per Processor Medium 3 Year Renewal		A0TB
Per Processor Large 3 Year Renewal		A0TC
SW Maintenance After License 3 Year	5664-H23	
Per Processor Small 3 Year After License		A1PM
Per Processor Medium 3 Year After License		A1PN
Per Processor Large 3 Year After License		A1PP

Software Maintenance is included with the product license for IBM PowerHA SystemMirror Enterprise Edition V6.1. SWMA for IBM PowerHA SystemMirror Enterprise Edition V6.1 may be obtained by ordering the following:

Feature description	Program number	OTC feature number
SW Maintenance Registration/Renewal 1 Year	5660-H24	
Per Processor Small 1 Year No-Charge Regist		A1QQ
Per Processor Small 1 Year Renewal		A1QR
Per Processor Medium 1 Year No-Charge Regist		A1QT
Per Processor Medium 1 Year Renewal		A1QU
Per Processor Large 1 Year No-Charge Regist		A1QV
Per Processor Large 1 Year Renewal		A1QW
SW Maintenance After License 1 Year	5661-H24	
Per Processor Small 1 Year After License		0470
Per Processor Medium 1 Year After License		0473
Per Processor Large 1 Year After License		0476
SW Maintenance Registration 3 Year	5662-H24	
Per Processor Small 3 Year Registration		0710
Per Processor Medium 3 Year Registration		0712
Per Processor Large 3 Year Registration		0714
SW Maintenance Renewal 3 Year	5663-H24	
Per Processor Small 3 Year Renewal		A0TD
Per Processor Medium 3 Year Renewal		A0TE
Per Processor Large 3 Year Renewal		A0TF
SW Maintenance After License 3 Year	5664-H24	
Per Processor Small 3 Year After License		A1PQ
Per Processor Medium 3 Year After License		A1PR
Per Processor Large 3 Year After License		A1PT

Software Maintenance is included with the product license for IBM Compliance Expert Express Edition V1.1. SWMA for IBM Compliance Expert Express Edition V1.1 may be obtained by ordering the following:

Feature description	Program number	OTC feature number
SW Maintenance Registration/Renewal 1 Year	5660-G82	
Per Processor Small 1 Year No-Charge Regist		A1PU
Per Processor Small 1 Year Renewal		A1PV
Per Processor Medium 1 Year No-Charge Regist		A1PW
Per Processor Medium 1 Year Renewal		A1QA
Per Processor Large 1 Year No-Charge Regist		A1QB
Per Processor Large 1 Year Renewal		A1QC
SW Maintenance After License/Renewal 1 Year	5661-G82	
Per Processor Small 1 Year After License	0459	
Per Processor Medium 1 Year After License	0460	
Per Processor Large 1 Year After License	0461	
SW Maintenance Registration 3 Year	5662-G82	
Per Processor Small 3 Year Registration	0699	
Per Processor Medium 3 Year Registration	0700	
Per Processor Large 3 Year Registration	0701	
SW Maintenance Renewal 3 Year	5663-G82	
Per Processor Small 3 Year Renewal		A0RT
Per Processor Medium 3 Year Renewal		A0RU
Per Processor Large 3 Year Renewal		A0RV
SW Maintenance After License 3 Year	5664-G82	
Per Processor Small 3 Year After License		A1PG
Per Processor Medium 3 Year After License		A1PH
Per Processor Large 3 Year After License		A1PJ

Software Maintenance upgrades

No SWMA in base: Upgrades are not valid if there is no SWMA in base.

If CHIS maintenance is in the base: The upgrade feature is generated in econfig on the license only. Text for a "MUST READ" notice that will state that the CHIS PID also needs to be updated. The text will also be included on the priced output.

If valid SWMA in the base and no CHIS: Regardless of what is in the base, registration, renewal, or after license, as long as there is valid maintenance in place, the upgrade path is available. Upgrades of SWMA should always be to either one- or three-year registration (5660-xxx or 5662-xxx). One year is the only option if a one-year PID is in the base. Three years is the only option if a three-year PID is in the base.

Upgrade from 5660-H23, 5661-H23 Standard Edition to 5660-H24 Enterprise Edition

Description	5660-H24 Upgrade To Feature number
Per Processor Small System 1 Yr Reg	1471
Per Processor Medium System 1 Yr Reg	1473
Per Processor Large System 1 Yr Reg	1475

Upgrade from 5662-H23, 5663-H23, 5664-H23 Standard Edition to 5662-H24 Enterprise Edition

Description	5662-H24 Upgrade To Feature number
Per Processor Small System 3 Yr Reg	0732

Per Processor Medium System 3 Yr Reg	0734
Per Processor Large System 3 Yr Reg	0736

Upgrade from 5660-HMP, 5661-HMP to 5660-H23

Description	5660-H23 Upgrade To Feature number
Per Processor Small System 1 Yr Reg	1465
Per Processor Medium System 1 Yr Reg	1467
Per Processor Large System 1 Yr Reg	1469

Upgrade from 5662-HMP, 5663-HMP, 5664-HMP to 5662-H23

Description	5662-H23 Upgrade To Feature number
Per Processor Small System 3 Yr Reg	0726
Per Processor Medium System 3 Yr Reg	0728
Per Processor Large System 3 Yr Reg	0730

System Program Order (SPO): An order for SPO 5692-A5L, 5692-A6P, or 5692-LOP is mandatory for shipments of program distribution. The individual licensed program orders are for registration and billing purposes only. No shipment occurs under these orders.

Specify feature number 3435.

Machine-readable materials are only available on DVD. To receive shipment of machine-readable materials, the order needs to include SPO 5692-A5L or 5692-A6P. The individual licensed program order (for example, 5765-G82) must still be ordered but will be for registration and billing purposes only and will not result in shipment of materials.

Program number	Program/Function name	Feature number
5692-A6P	ICE Express Edition v1.1	2262
5692-A5L	ICE Express Edition v1.1	2262
5692-A6P	PowerHA SystemMirror Standard Edition v6.1	2263
5692-A5L	PowerHA SystemMirror Standard Edition v6.1	2263
5692-A6P	PowerHA SystemMirror Enterprise Edition v6.1	2256
5692-A5L	PowerHA SystemMirror Enterprise Edition v6.1	2256
5692-A6P	AIX Toolbox for Linux Applications	2259
5692-A5L	AIX Toolbox for Linux Applications	2259
5692-A6P	Workload Partitions Manager	2258

Basic machine-readable material

Select one of the following priced feature numbers for media type under 5692-LOP. The media process charge is a one-time, nondiscountable charge of \$50 per SPO order when media is selected.

New media type available on SPO 5692-LOP.

Media type	Media feature number	Media process charges feature number
DVD	3435	1100 Media Charge
DVD	3435	1101 Media No-charge

Documentation

The amount of translation varies by language. Translated softcopy documentation general availability varies by language and manufacturing geography. Translations will become available, over time, as translations are released by language-specific country translation centers. The documentation is also available at

<http://publib14.boulder.ibm.com/infocenter/systems/aix>

Preinstallation

The preinstallation option is only valid if accompanied by a hardware system order for the preinstalled AIX 6.1 operating system specifying the preinstallation option.

It is recommended that backup media be chosen with preinstalled orders. Not all of the software offered under the licensed program will be preinstalled on the system disk. To take delivery of backup media, media feature 3435 must be specified. Software preinstalled on the hard disk does not include all of the function included on the media.

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License Information form number

LC23-5073-00 IBM PowerHA SystemMirror Standard Edition V6.1
LC23-5074-00 IBM PowerHA SystemMirror Enterprise Edition V6.1
LC23-5075-00 IBM Compliance Expert Express Edition V1.1
LC23-5080-00 IBM Workloads Partitions Manager V2.1

The program's License Information will be available for review on the IBM Software License Agreement Web site

<http://www.ibm.com/software/sla/sladb.nsf>

Limited warranty applies

Yes

Limited warranty

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

<http://www.ibm.com/support/handbook>

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

Money-back guarantee

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

Authorization for use on home/portable computer

You may not copy and use this program on another computer without paying additional license fees.

Volume orders (IVO)

Yes. Contact your IBM representative.

Passport Advantage applies

No

Software Subscription and Support applies

Yes.

All distributed software licenses include Software Subscription and Support (also referred to as Software Maintenance) for a period of 12 months from the date

of acquisition, providing a streamlined way to acquire IBM software and assure technical support coverage for all licenses. Extending coverage for a total of three years from date of acquisition may be elected.

While your Software Subscription and Support is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, consult your IBM Software Support Handbook at

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Software Subscription and Support does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under this agreement.

System i Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

15% to qualified educational institution customers.

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The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

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To learn how Electronic Services can work for you, visit

<http://www.ibm.com/support/electronic>

Prices

For all local charges, contact your IBM representative.

AP distribution

Country/Region	Announced
AP IOT	
ASEAN*	Yes
India/South Asia**	Yes
Australia	Yes
People's Republic of China	Yes
Hong Kong S.A.R of the PRC	Yes
Macao S.A.R of the PRC	Yes
Taiwan	Yes
Korea	Yes
New Zealand	Yes
Japan IOT	
Japan	Yes

* Brunei Darussalam, Indonesia, Cambodia, Lao People's Democratic Republic, Malaysia, Philippines, Singapore, Thailand, and Vietnam

**Bangladesh, Bhutan, India, Sri Lanka, Maldives, Nepal, and Afghanistan

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